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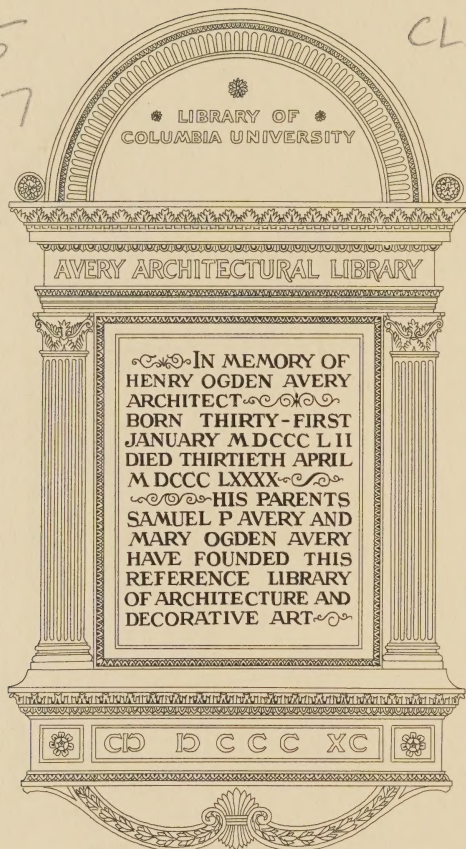
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HOWARTH'S  
REVERSIBLE  
SASH CENTERS

DETROIT,  
MICH.  
1900.





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COLUMBIA UNIVERSITY

AVERY ARCHITECTURAL LIBRARY

IN MEMORY OF  
HENRY OGDEN AVERY  
ARCHITECT  
BORN THIRTY-FIRST  
JANUARY M.DCCC LII  
DIED THIRTIETH APRIL  
M.DCCC LXXX  
HIS PARENTS  
SAMUEL P AVERY AND  
MARY OGDEN AVERY  
HAVE FOUNDED THIS  
REFERENCE LIBRARY  
OF ARCHITECTURE AND  
DECORATIVE ART

CD DCCC XC

DESTROY ALL PREVIOUS ISSUES.



**OWARTH**

**Reversible Sash  
and Sash Genter  
Company**

**15 and 17 Gilman Street,  
DETROIT, MICHIGAN.**



## To the Architects, Builders and Hardware Trade:



WE take great pleasure in presenting our patrons with our Illustrated Catalogue and Price List of 1900.

We have availed ourselves of this opportunity to more fully illustrate our line of Howarth Reversible Sash Centers with complete details with each Center, and on examining our revised Catalogue you will readily see that we have greatly increased our variety of sizes to meet the constantly increasing demand for the Howarth Reversible Sash Centers illustrated herein.

Hoping that our efforts will, as in the past, be rewarded by the liberal and continued orders of our customers and the general trade, we are,

Yours respectfully,

THE HOWARTH REVERSIBLE  
SASH AND SASH CENTER  
COMPANY.





## REMARKS.



**Howarth's Reversible Sash Centers** have been on the market over seven years, and are being used and recommended by all the leading Architects throughout the United States and Canada

### **For All Classes of Public Buildings**

Such as Schools, Churches, Office Buildings, Court Houses, Post-offices, Railroad Depots, Factories, Car Barns, Power Houses, Cotton Mills, etc., etc.

# **REASONS WHY**

## **Howarth Reversible Sash Centers Are at the Head.**

### **FIRST—**

You can pivot any window made on **Howarth Reversible Sash Centers**.

### **SECOND—**

**Howarth Reversible Sash Centers** are so constructed as to enable you to retain a double stop all around the sash, thereby making a perfect weather-proof window. Hung on pivots.

### **THIRD—**

**Howarth Reversible Sash Centers** are so made as to allow the reversing of all windows for cleaning purposes, and entirely doing away with the danger and inconvenience of climbing outside to wash windows.

### **FOURTH—**

**Howarth Reversible Sash Centers** are made and finished in the best possible manner. Every Center that we make has machined finish bearings, thereby making a Center that will always work smooth and perfect.

### **FIFTH—**

**Howarth Reversible Sash Centers** are less expensive to use than any other centers made, if the parties using them want a weather-proof window and a window that will reverse for cleaning.



## TO THE HARDWARE TRADE:

### **Howarth Reversible Sash Centers]**

Are put up in neat, strong pasteboard boxes, suitable for placing on the shelves with the best grades of hardware. Each package is marked and numbered in a neat and distinct manner, so that one can tell at a glance just what kind of goods each package contains.

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### **Howarth Reversible Sash Centers**



**Are made up in the following  
finishes for regular stock goods:]**



**BLACK IRON  
POLISHED BRASS  
PLAIN BRONZE METAL**

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In ordering Plain Bronze Metal Centers, prefix another cipher before our Brass number. Thus: No. 050 calls for Brass, and 0050 would call for Plain Bronze Metal.

**Howarth Reversible Sash Centers** can also be furnished in any special finish to match finish of other hardware. Prices quoted on same.

## TERMS.

All goods are sold payable [in thirty days' time from date of invoice.

A cash discount of TWO PER CENT. will [be allowed if paid within ten days from date of invoice.

All goods are sold F. O. B. Detroit, Mich., and will be shipped by freight, unless otherwise ordered.

We allow no claims for damages after [goods have been receipted for in good order by transportation company.

All claims for [shortages and errors must be made within ten days from date of shipment.

All remittances must be made by draft on New York or Detroit without allowances for exchange or express charges.

Discounts from list price will be quoted to the hardware trade on application.

Prices subject to change without notice.

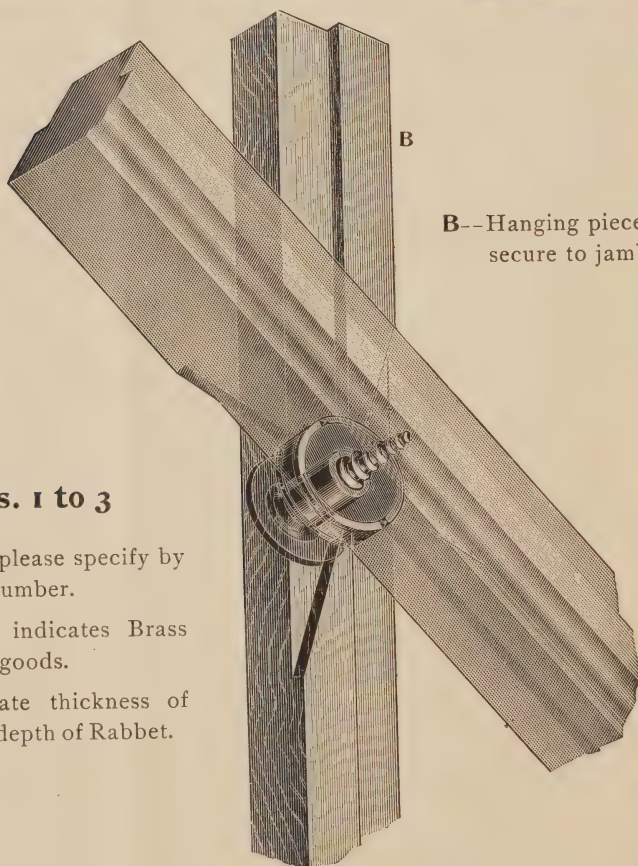
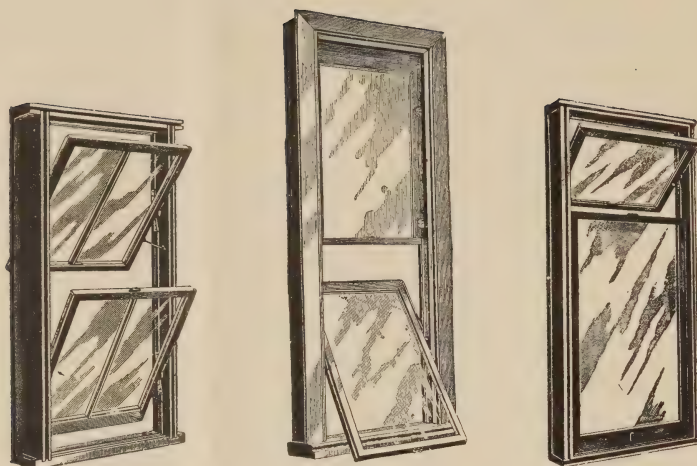
Very respectfully,

THE HOWARTH REVERSIBLE  
SASH AND SASH CENTER  
COMPANY.





From a Photo of Vestibule of the J. L. Hudson Building,  
Detroit, Michigan.



B

B--Hanging piece to  
secure to jamb.

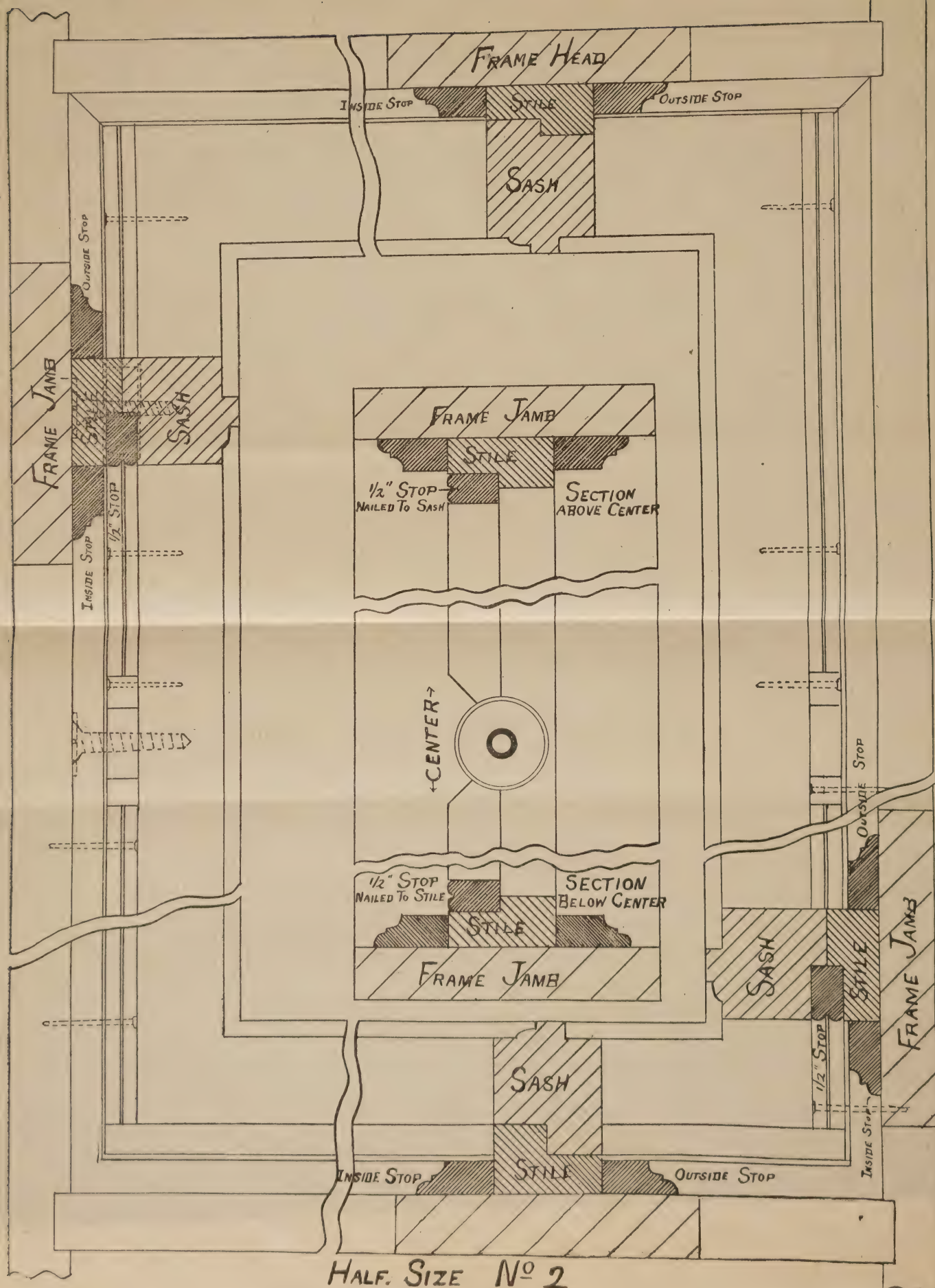
### Nos. 1 to 3

Architects please specify by  
number.

0 prefixed indicates Brass  
goods.

Always state thickness of  
Sash and depth of Rabbet.









# Howarth Sash Centers

Nos. 1 to 3

ARE INTENDED FOR

## ... CHURCH WINDOWS ...

As illustrated on following page.

Hanging piece may be ploughed and bored and hung to cord or screwed stationary to jamb.

These Centers consist of washers and special screws for same.

This is a good tight-jointed Center for swinging transoms. No stops or parting strips are needed.

### IRON.

					List Per Set
No. 1,	for $1\frac{3}{8}$ inch sash,	for one sash,	.	.	\$0 55
" 2,	" $1\frac{3}{4}$	" " "	.	.	65
" 3,	" $2\frac{1}{4}$	" " "	.	.	75

### BRASS.

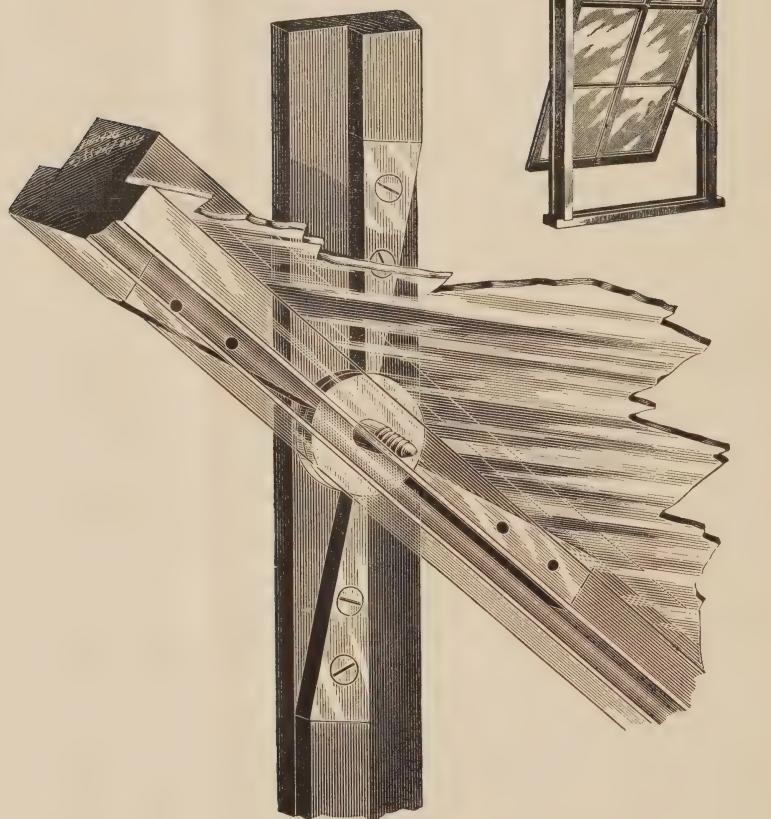
No. 01,	for $1\frac{3}{8}$ inch sash,	for one sash,	.	.	60
" 02,	" $1\frac{3}{4}$	" " "	.	.	80
" 03,	" $2\frac{1}{4}$	" " "	.	.	1 20

*Three sets packed in each box.*

*This Center should be put on at the mill.*

# HOWARTH SASH CENTERS

Nos. 10 to 12.



Patented June 20th, 1893.

Architects please specify by Number.

Ō prefixed indicates Brass goods.









# Howarth's Reversible Sash Center

Nos. 10 to 12

CAN BE USED ON ALL KINDS OF

## ... PIVOTED WINDOWS ...

Hung on sides, except round or elliptical windows, and is especially adapted for single sash plank frame factory windows, as it will give the whole opening for ventilating purposes, also allowing sash to be reversed inside out so as to allow a person to clean both sides of the glass from the inside of the building. This way of hanging factory windows is *less* expensive than an ordinary **DOUBLE SASH PLANK FRAME WINDOW** and *much less expensive* than a Double Hung window with a Box Frame.

This Center is made with a concave and convex joint, machine finished and riveted together making weather proof and a perfect working pivot. The beveled ears form the bevel of the stops and makes an easy and substantial way of fastening pivot to the sash and frame.

### JAPANNED IRON.

List Per Set

No. 10,	for $1\frac{3}{8}$ to $1\frac{1}{2}$ inch sash,	for one sash,	<b>\$0 50</b>
" 11,	" $1\frac{3}{4}$ " 2	" " "	<b>60</b>
" 12,	" $2\frac{1}{4}$ " $2\frac{1}{2}$	" " "	<b>90</b>

### BRASS.

No. 010,	for $1\frac{3}{8}$ to $1\frac{1}{2}$ inch sash,	for one sash,	<b>1 80</b>
" 011,	" $1\frac{3}{4}$ " 2	" " "	<b>2 80</b>
" 012,	" $2\frac{1}{4}$ " $2\frac{1}{2}$	" " "	<b>4 50</b>

### DIRECTIONS FOR APPLYING ABOVE.

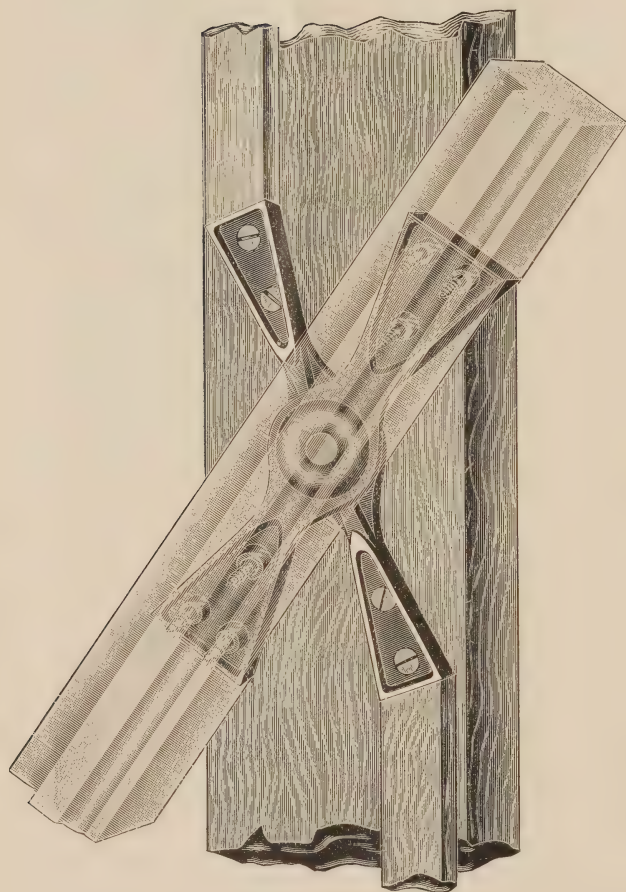
Screw center to sash and stile, then screw stile to window jamb, then nail stops on each side of stile as shown on detail.

*Above Centers packed one set in each box.*

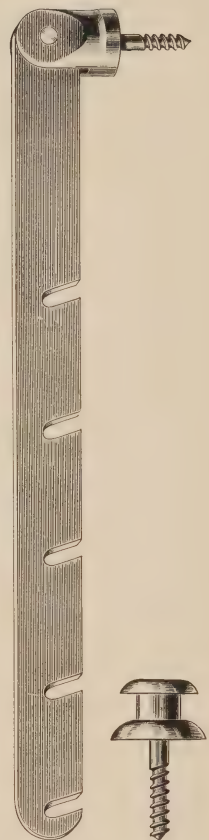
*Brass Centers packed with screws.*

# HOWARTH SASH CENTERS

Nos. 20 to 22.



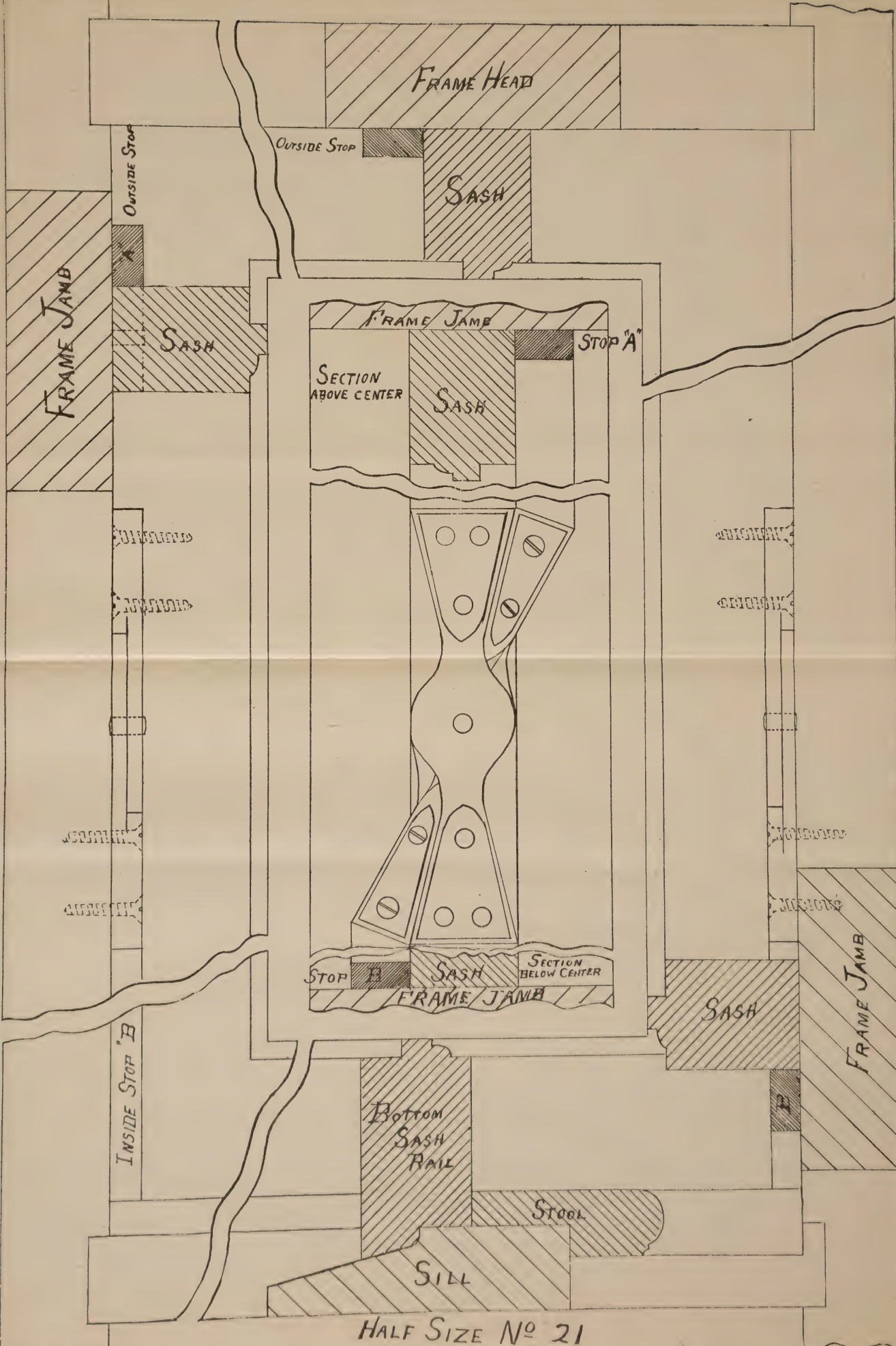
EXTENSION HOOK No. 87.



Patented June 20th, 1893.

Architects please specify by Number.  
0 prefixed indicates Brass goods.





HALF SIZE No 21





## Nos. 20 and 21

are intended for factory windows, as are here shown, plain face jambs and single sash.

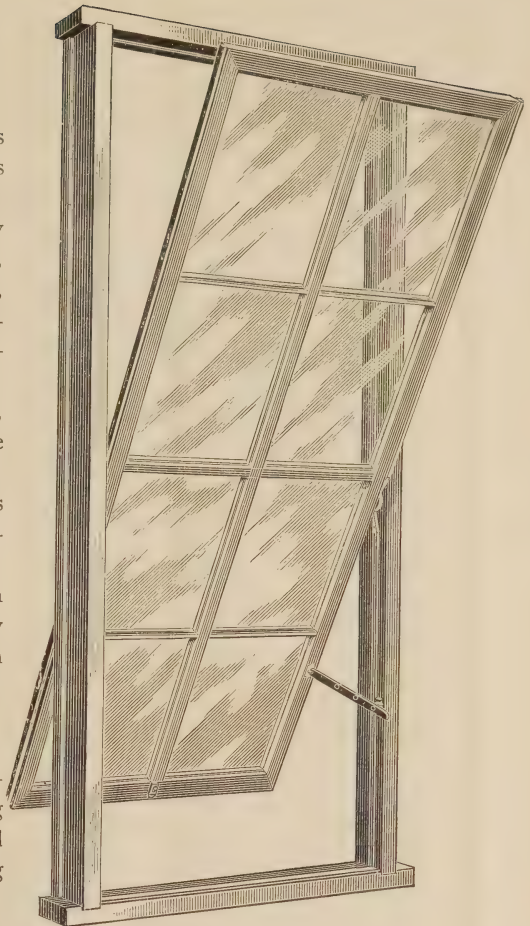
The windows are being very largely adopted for power houses, car sheds, barns, stables, waterworks buildings, engine houses, machine shops, warehouses, foundries, cotton mills, railroad depots, etc.

No inside stops, no blind stops, no parting strips, no grooving the frame, no reverse rebating.

Frames can be made by hand as quick as by machine by the commonest carpenter.

Fit sash  $\frac{1}{16}$  slack, put centers on sash, stand sash in position, screw ears to frame, swing open, and put on stops. If wire guards are necessary, make them to fasten on the sash.

They cost very little, are durable, give better ventilation, will turn outside inside for cleaning or replacing broken glass, or can be fitted and hung and glazed after, without taking out. Stops should be  $\frac{1}{2} \times \frac{7}{8}$  inches.



### IRON.

No. 20, for $1\frac{1}{2}$ inch sash, for one sash,	List Per Set
“ 21, “ $1\frac{3}{4}$ “ “ “	\$0 50
“ 22, “ 2 “ “ “	60
	90

### BRASS.

No. 020, for $1\frac{1}{2}$ inch sash, for one sash,	2 30
“ 021, “ $1\frac{3}{4}$ “ “ “	3 00
“ 022, “ 2 “ “ “	4 75

*Packed one set in each box.*

*Brass Centers are packed with screws.*

*NOTE.—Sash does not need rebating as with Nos. 10, 11 and 12.*

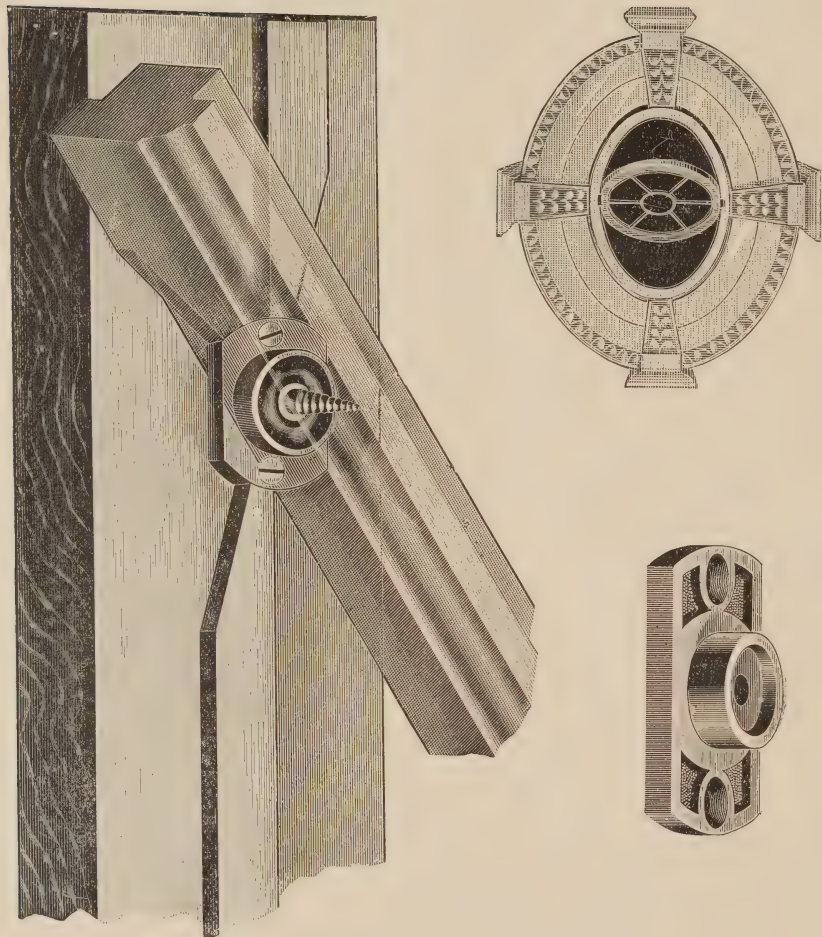
### EXTENSION HOOKS.

No. 87, Iron,	List Each
“ 087, Brass,	\$0 30
	1 25

0 prefixed indicates Brass goods.

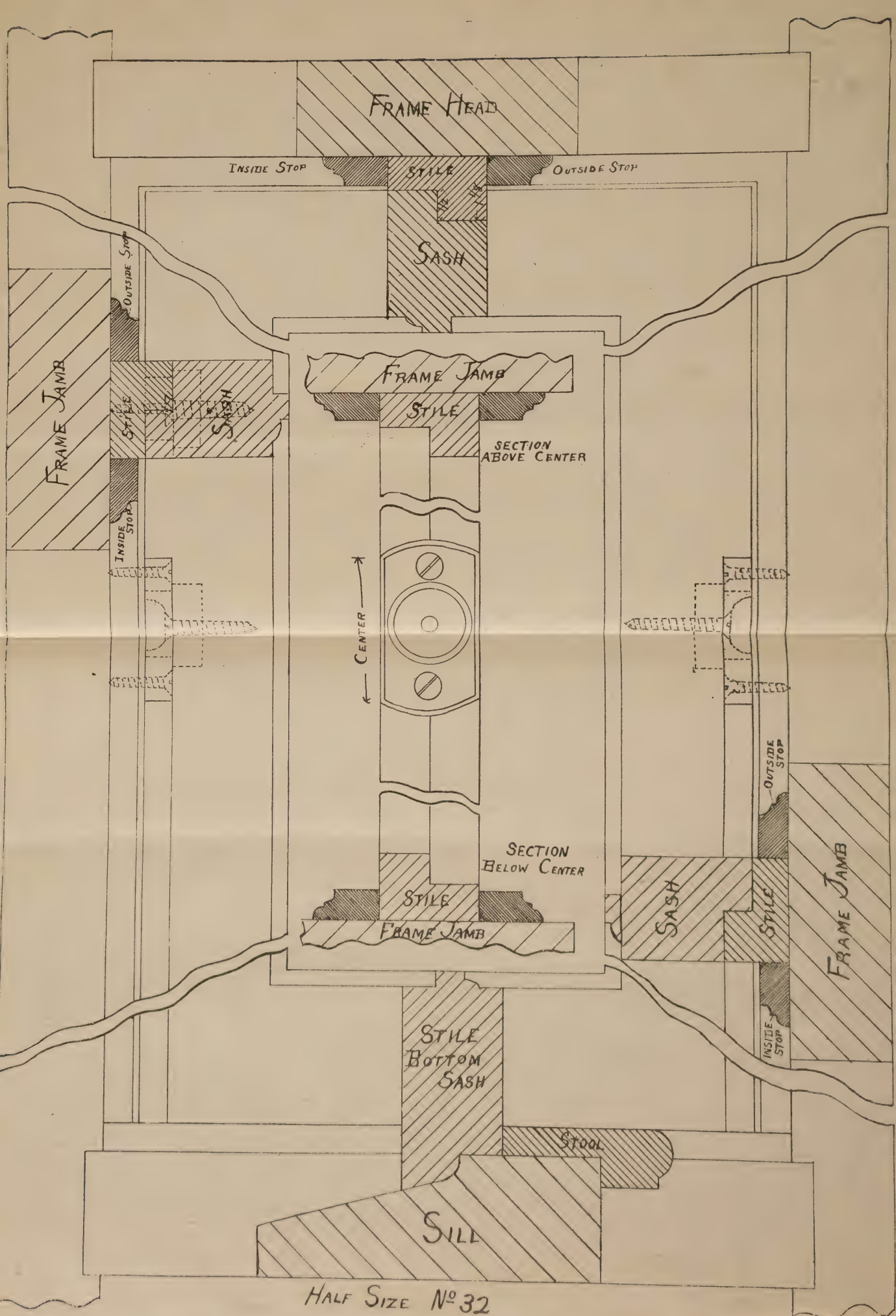
# HOWARTH'S SASH CENTERS

Nos. 30 to 34.



Architects please specify by Number.  
0 prefixed indicates Brass goods.

*Brass goods packed with screws.*







# Howarth's Reversible Sash Centers

Nos. 30 to 34

Are especially adapted for hanging inside transoms in all classes of Public Buildings. It makes the transoms just as tight, when closed, as though it was hinged at the top or bottom, and all will agree that a transom hung on pivots works much more perfect than when hinged, from the fact the transom when pivoted is evenly balanced, consequently does not throw so much weight on the transom lift.

This Center is also used very largely for hanging round or elliptical windows as shown on page 14.

## IRON.

No. 30	for	1 $\frac{3}{8}$	inch sash, per set for one sash,	\$0 40
" 31	"	1 $\frac{1}{2}$	" " " "	50
" 32	"	1 $\frac{3}{4}$	" " " "	60
" 33	"	2	" " " "	70
" 34	"	2 $\frac{1}{4}$	" " " "	80

## BRASS.

No. 030	for	1 $\frac{3}{8}$	inch sash, per set for one sash,	\$1 20
" 031	"	1 $\frac{1}{2}$	" " " "	1 60
" 032	"	1 $\frac{3}{4}$	" " " "	2 00
" 033	"	2	" " " "	2 25
" 034	"	2 $\frac{1}{4}$	" " " "	2 50

## HOW TO APPLY ABOVE CENTERS.

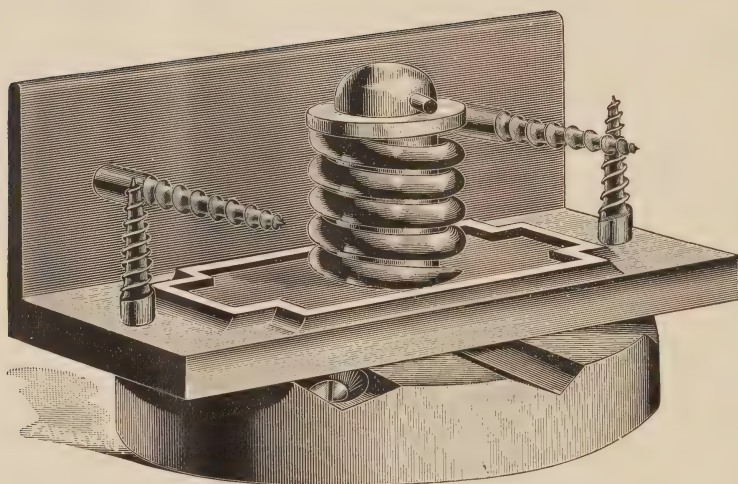
Make the sash and stile reverse rebated for Nos. 30 to 34 with  $\frac{3}{8}$  inch rebate, then mortise round piece into sash and put in screw, then place oblong plate on sash, put sash in opening, open sash and screw oblong plate to stile or frame, then plant stops on frame as shown in detail.

*Brass goods packed with screws.*

# HOWARTH'S SASH CENTERS

Nos. 600 to 602.

AUTOMATIC.



Patent applied for.

*NOTE.—Use same detail as for Nos. 60 to 65.*

Architects please specify by Number.

0 prefixed indicates Brass goods.



# Golden Improved Automatic Sash Center

Nos. 600 to 602

PARTICULARLY ADAPTED TO

## ... LARGE WINDOWS ...

Hung on bottom and top, or **Heavy Transoms** hung on sides. We do not care how heavy your window is, it will hang it. It needs no transom lift or sash adjuster, as it works automatically, and will stay in any position you may place it. Make your frame in the usual way; it needs no special frame.

*NOTE.—Use same detail as for Nos. 60 to 65 Center.*

### IRON.

	List Per Set
No. <b>600</b> , for $1\frac{3}{4}$ to $2\frac{1}{8}$ inch sash, . . .	<b>\$ 1 40</b>
“ <b>601</b> , “ $2\frac{1}{4}$ “ $2\frac{5}{8}$ “ “ . . .	<b>1 85</b>
“ <b>602</b> , “ $2\frac{3}{4}$ “ 3 “ “ . . .	<b>2 40</b>

### BRASS.

No. <b>0600</b> , for $1\frac{3}{4}$ to $2\frac{1}{8}$ inch sash, . . .	<b>4 60</b>
“ <b>0601</b> , “ $2\frac{1}{4}$ “ $2\frac{5}{8}$ “ “ . . .	<b>5 40</b>
“ <b>0602</b> , “ $2\frac{3}{4}$ “ 3 “ “ . . .	<b>6 50</b>

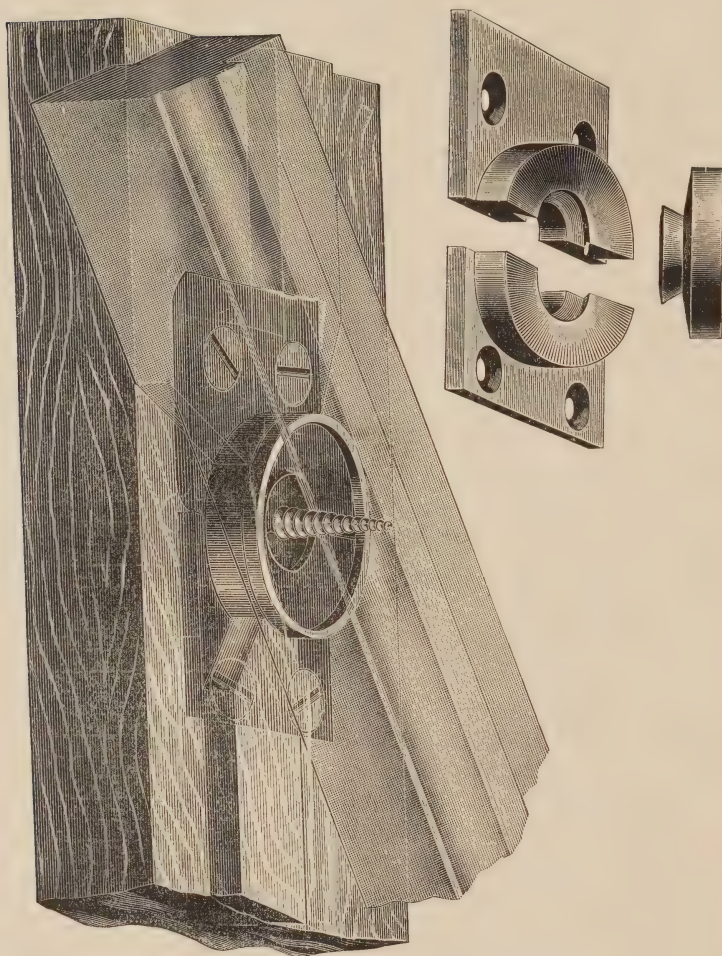
*One set packed in each box.*

*Brass goods packed with screws.*

0 prefixed indicates Brass.

# HOWARTH'S SASH CENTERS

Nos. 50 to 52.

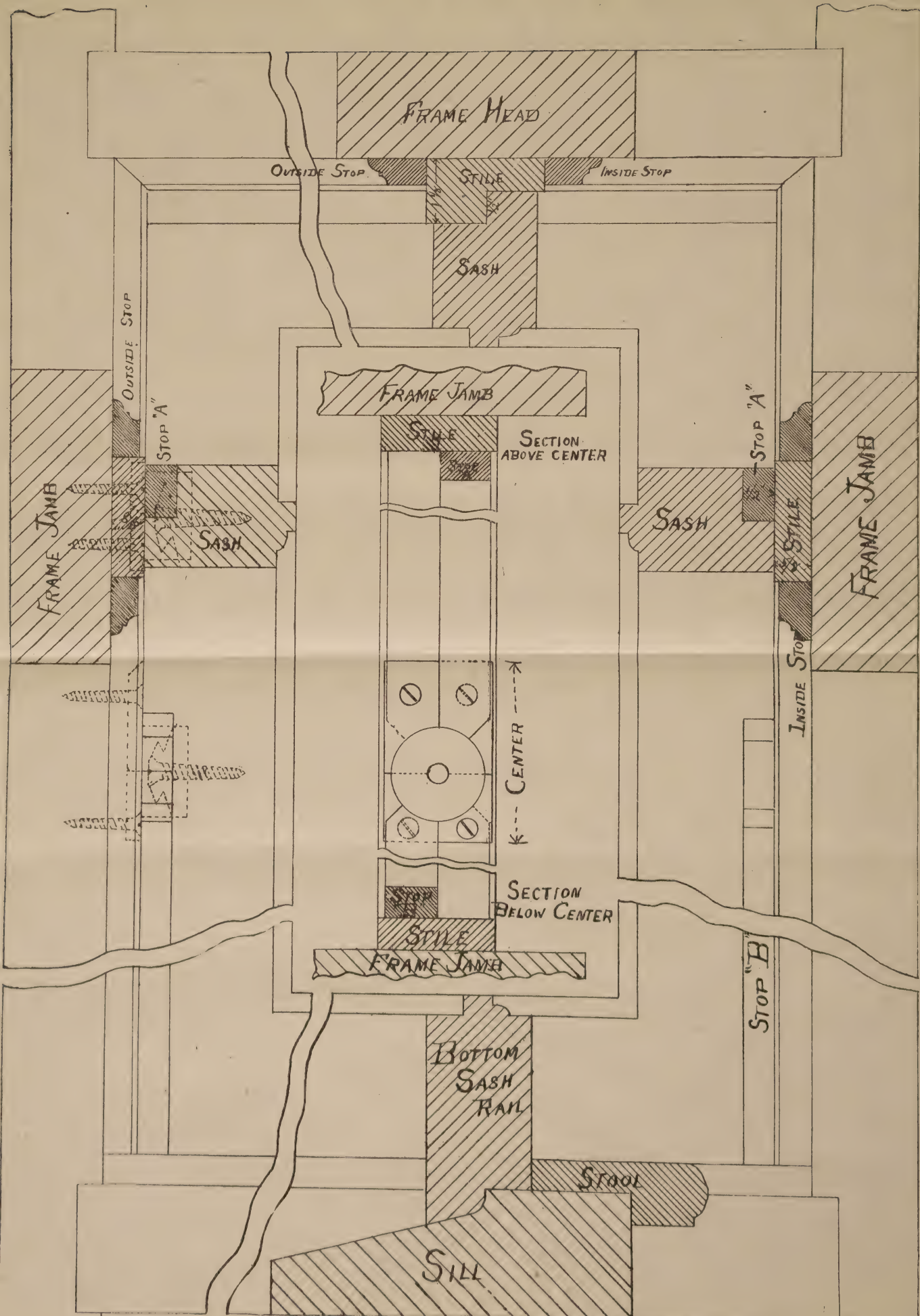


Patented June 20th, 1893.

Architects please specify by Number.

Brass goods packed with screws.

0 prefixed indicates Brass goods.



HALF SIZE No 50





# Howarth's Reversible Sash Centers

Nos. 50 to 52

Are especially adapted for all heavy outside plate glass, transoms and windows, when such transoms or windows are to be pivoted on the sides.

These Centers are made with concave, convex and a dovetail joint and machine finished to give a perfect bearing and weatherproof joint.

## IRON.

No. 50	for	1 $\frac{3}{4}$	to	2	inch sash,	per set for one sash,	\$1 00
" 51	"	2 $\frac{1}{4}$	"	2 $\frac{3}{4}$	"	"	1 20
" 52	"	3	"	4	"	"	2 20

## BRASS.

No. 050	for	1 $\frac{3}{4}$	to	2	inch sash,	per set for one sash,	\$2 30
" 051	"	2 $\frac{1}{4}$	"	2 $\frac{3}{4}$	"	"	3 20
" 052	"	3	"	4	"	"	6 50

## TO APPLY ABOVE CENTERS.

Mortise plates into stile flush, screw bottom plate fast. Mortise studs into sash, hang sash in place, turn sash across opening and put upper plate in place, then plant stops on to stile to fit in rebate of sash. Bevels on end of stops touching centers may be cut any angle for reversing the sash. Sash should always be reverse rebated so as to swing in from the top. (See Detail.)

*Packed one set in each box.*

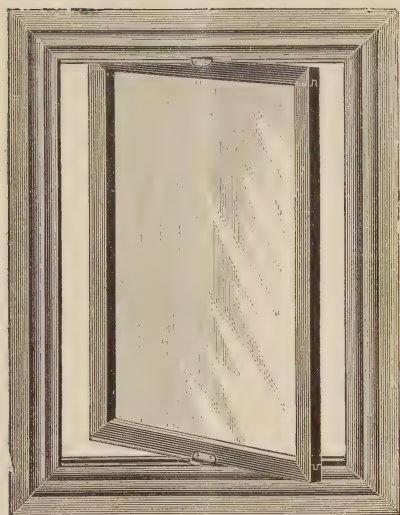
*Brass goods packed with screws.*

0 prefixed indicates Brass goods.

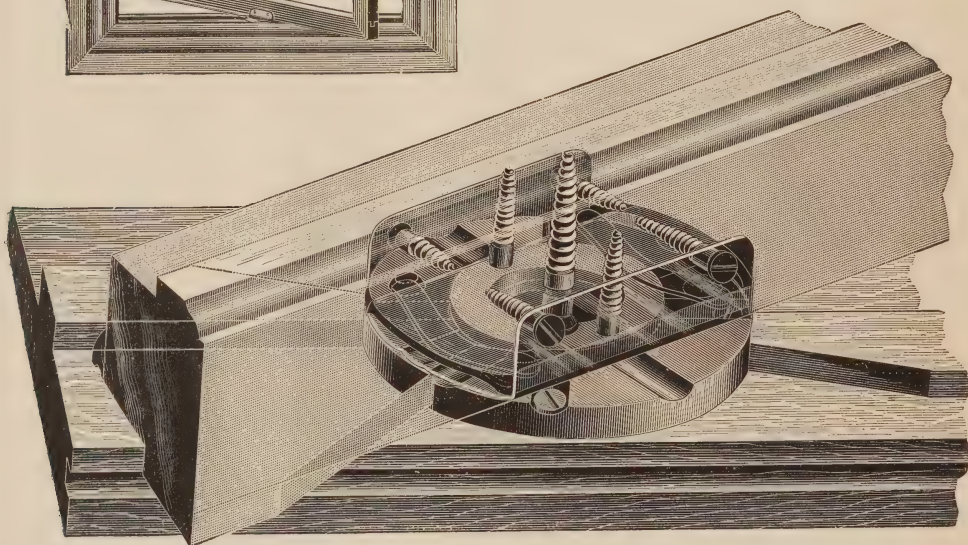
# HOWARTH'S SASH CENTERS

Nos. 60 to 65.

AUTOMATIC.



This Sash Plate is furnished for covering springs with all brass goods.



Patented May 13th, 1893.

Depth of Rebate  $\frac{1}{2}$  inch.

Architects please specify by Number.

0 prefixed indicates Brass goods.







# Howarth's Reversible Sash Centers

Nos. 60 to 65

Are intended for hanging windows top and bottom, as shown on page 20, and should be used in connection with a reverse rebated joint. This Center combines a pivot and casement adjuster, and will hold the window at any position, when open for ventilation, without any other fixture. It also exerts the same control over the top rail as bottom rail. It has a large bearing surface for the sash to rest on. Rebates must be  $\frac{1}{2}$ -inch deep.

This is certainly the best Center manufactured for extraordinary large and heavy windows, and can be used on circular head as well as on square windows and transoms. The Centers are to be put on the sash, sash slid in place, close the sash and screw plates to head and sill, swing the sash outside inside and set glass, reverse sash and plant stops on frame. *Be sure and add the drip strip on bottom rail outside.*

Be sure and place a strip of pine 12 to 18 inches long,  $\frac{1}{16}$  thick and  $\frac{3}{8}$  wide in the rebate of bottom rail, extending from the center both ways for the glass to rest on, for the sharp edge of the glass (weighing, say, from 200 to 500 lbs.) often indents the wood at the center and the sash rail sinks at each end from the pressure  $\frac{1}{4}$  to  $\frac{3}{8}$  of an inch.

## IRON.

	List Per Set
No. 60, for $1\frac{3}{4}$ inch sash, for one sash, . . .	\$1 40
" 61, " 2 " " " " . . .	1 55
" 62, " $2\frac{1}{4}$ " " " " . . .	2 00
" 63, " $2\frac{1}{2}$ " " " " . . .	2 15
" 64, " $2\frac{3}{4}$ " " " " . . .	2 50
" 65, " 3 " " " " . . .	2 65

## BRASS.

No. 060, for $1\frac{3}{4}$ inch sash, for one sash, . . .	3 00
" 061, " 2 " " " " . . .	3 25
" 062, " $2\frac{1}{4}$ " " " " . . .	4 25
" 063, " $2\frac{1}{2}$ " " " " . . .	4 50
" 064, " $2\frac{3}{4}$ " " " " . . .	5 50
" 065, " 3 " " " " . . .	6 00

*Packed one set in each box.*

*Brass goods packed with screws.*

0 prefixed indicates Brass goods.



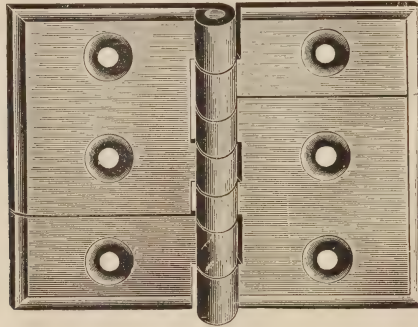
# GOLDEN HINGE.

No. 100.

This Hinge can be applied on all kinds of swinging windows to swing inside out for cleaning, and can be put on either at the factory or building.

Use same Detail as for Nos. 97 and 98 centers. You can also use the Golden Metal Weather Strip with it. See Detail on page 29.

We furnish sash and centers put together complete. Send us bill of your sash; we will give you figures. Delivered F. O. B. Detroit.



Patented Sept. 5th, 1899.

No. 100	for any size sash, per pair,	\$0 30
“ 0100	“ “ “ “ “ “ “ “	50

## NOTE.

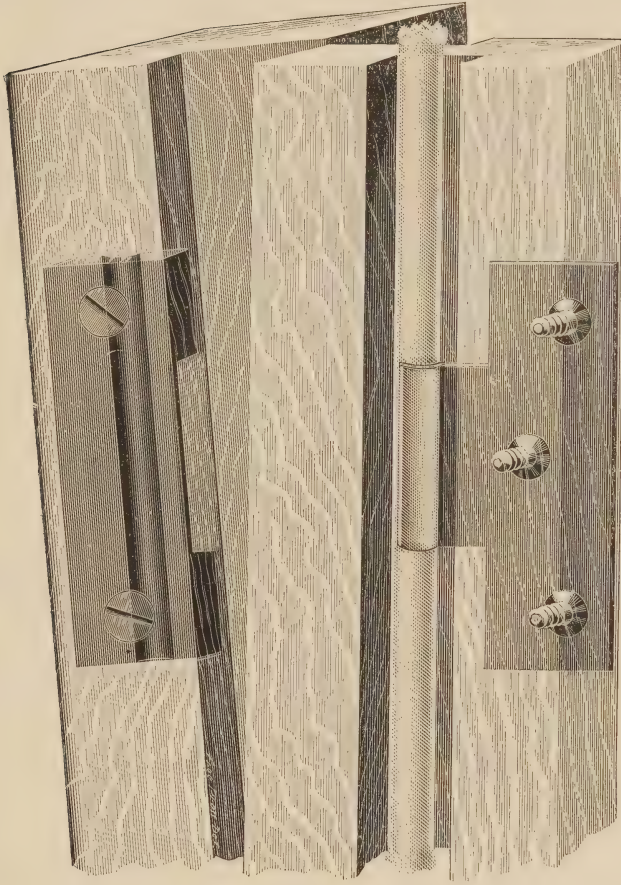
This Hinge will carry any window up to 150 lbs.

*Brass goods packed with screws.*

0 prefixed indicates Brass goods.

# AUTOMATIC CATCH

No. 95.



Cut of Automatic Spring and Catch used on Double Hung Windows for locking sash and hanging piece when sash is closed back in position.

## IRON.

No. 95. One set of two springs and two keepers, 20c

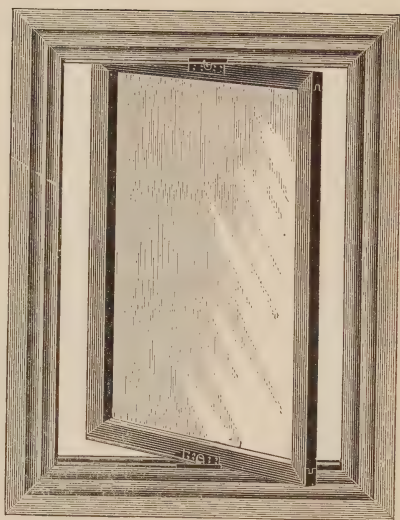
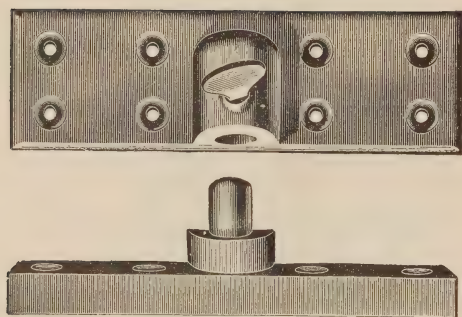
## BRASS.

No. 095. One set of two springs and two keepers, 40c

Please order by Number.

# Golden Reversible Sash Center

Nos. 110 to 111



Patented February 6th, 1900.

*NOTE.—No. 111 hung on top and bottom only; No. 110 hung on sides.*

*One set packed in each box.*

*Brass goods packed with screws.*

0 prefixed indicates Brass goods.







# Golden Reversible Sash Center

Nos. 110 and 111

Are intended for hanging windows top and bottom and sides. Use 110 for sides and 111 for top and bottom. This Center is easily applied, as it is screwed to the face of the sash and needs no mortising in the sash or frame. It is a first-class factory center, as it has a set screw which will hold the window at any angle, and needs no sash adjuster. (See Detail for other information.)

---

## IRON.

No. 110	for any size sash,	.	.	.	.	.	\$0 60
" 111	"	"	"	.	.	.	1 25

## BRASS.

" 0110	"	"	"	.	.	.	2 70
" 0111	"	"	"	.	.	.	4 00

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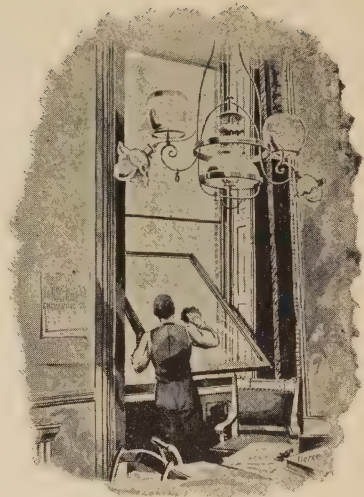
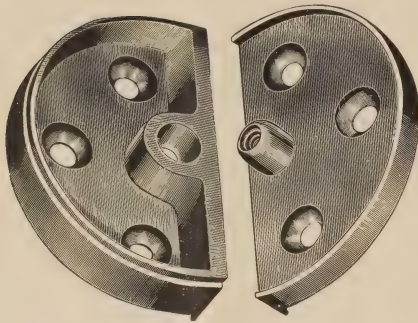
*One set packed in each box.*

*Brass goods packed with screws.*

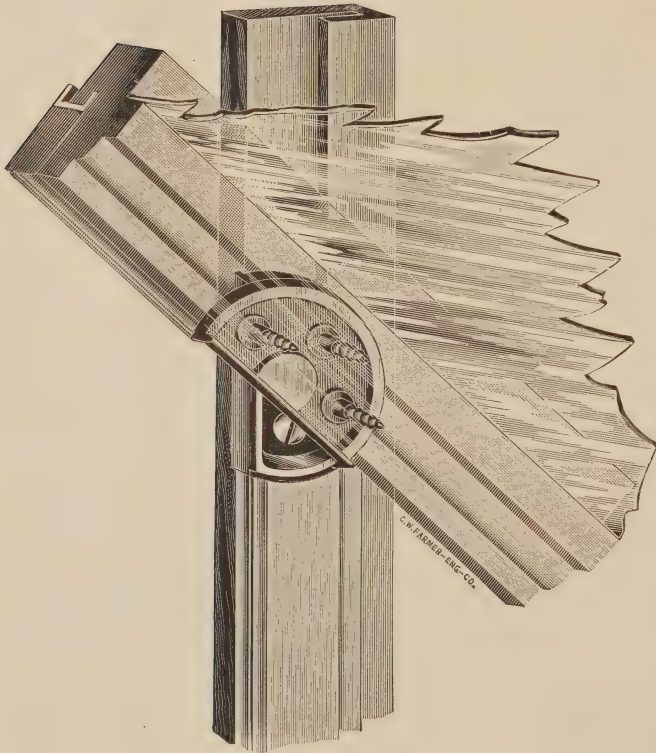
0 prefixed indicates Brass goods.



Nos. 97 to 98

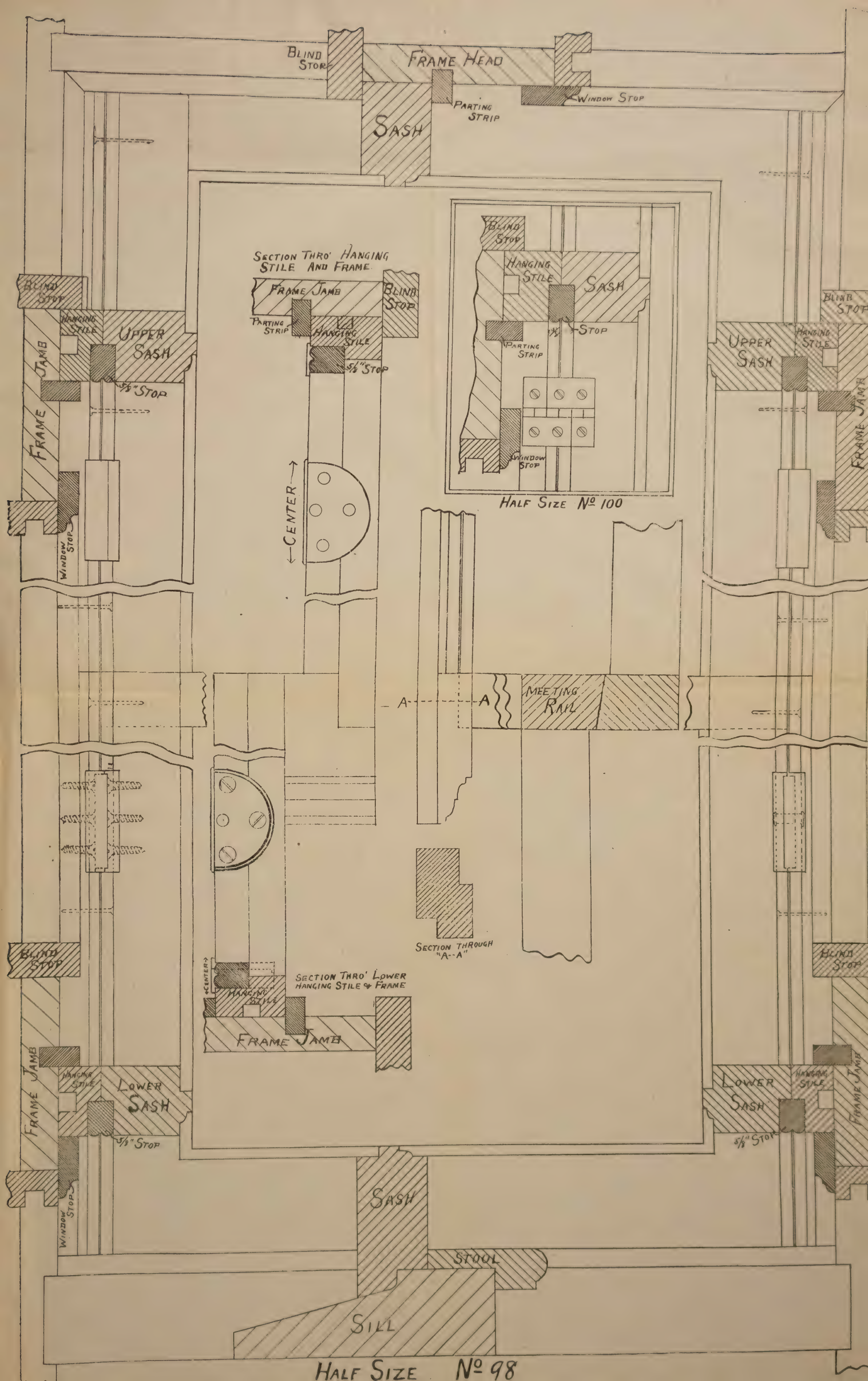


This is from a photo of a window made reversible for cleaning as well as sliding.



Patented Sept. 5th, 1899.

Architects please specify by number.









# Howarth Reversible

## Sash Center

Nos. 97 to 98

This Center is particularly adapted for pivoting sash hung with weights and cords. It is strong and weather-proof; is quickly and easily applied, and the tight rebated joint excludes both weather and sound, making it especially adapted for office transoms. The Golden Metal Weather Strip can be used in connection with it, making a perfect joint against dust and weather, and we will guarantee a window fitted up in this manner to be 50 per cent. tighter than any window in the market.

See Detail of Golden Metal Weather Strip for further information, on pages 28 and 29.

### IRON.

No. 97.	1 $\frac{3}{8}$ to 1 $\frac{3}{4}$ inch sash, per pair,	\$o 8o
" 98.	1 $\frac{3}{4}$ " 2 $\frac{1}{4}$ " " "	I oo

### BRASS.

" 097.	.....	" " . .	I 4o
" 098.	.....	" " . .	I 6o

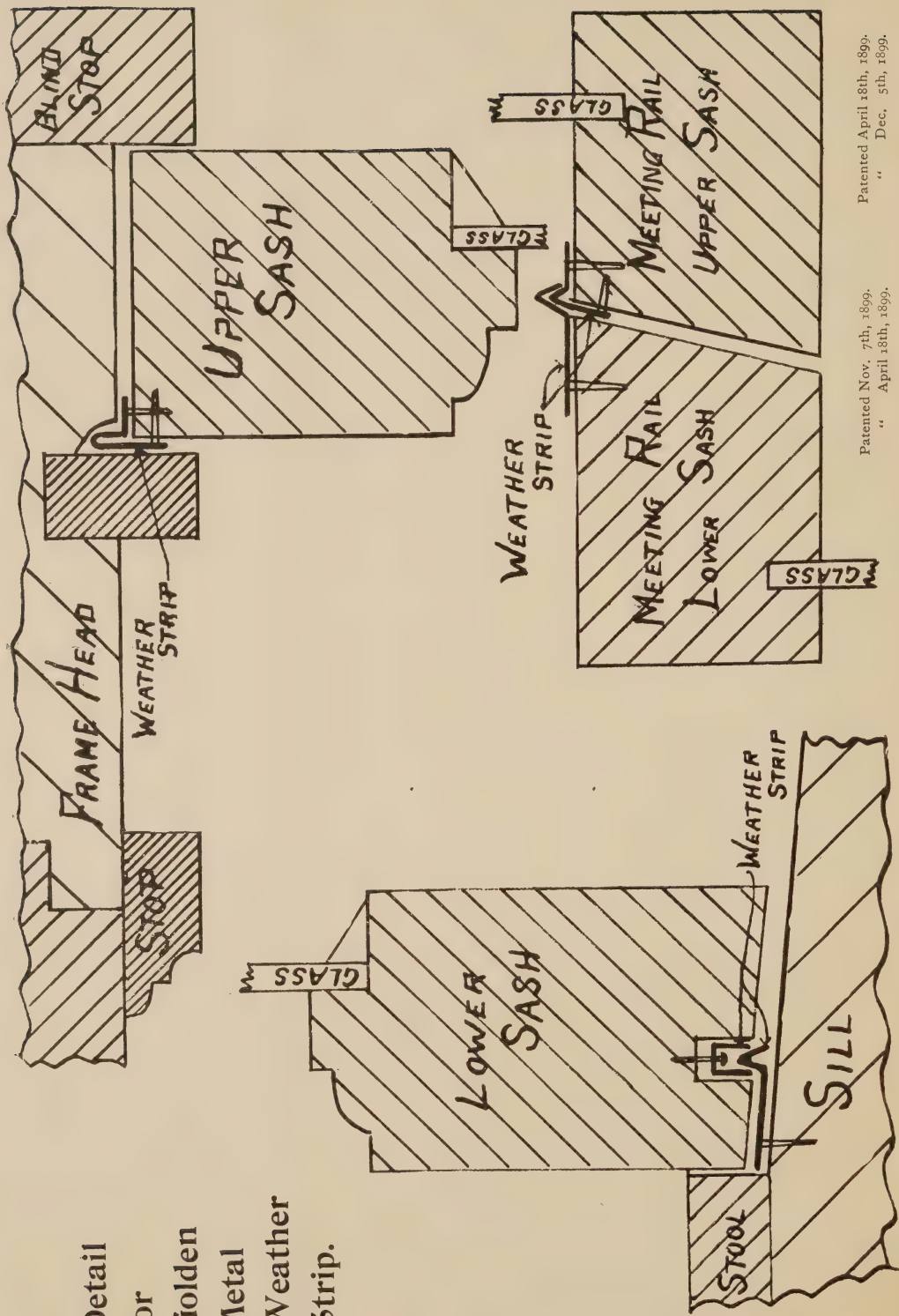
Please order by number.

We furnish sash and centers put together complete. Send us bill of your sash; we will give you figures. Delivered F. O. B. Detroit.

Special prices for special finish.

0 prefixed indicates Brass goods.

Detail  
for  
Golden  
Metal  
Weather  
Strip.



Patented Nov. 7th, 1899,  
" April 18th, 1899.

Patented April 18th, 1899,  
" Dec. 5th, 1899.

# Golden Metal Weather Strip

Patented  
April 18th, 1899.

**Keeps the Cold Out.**—No cold drafts can enter around the sash, and it will save 20 per cent. of your coal.

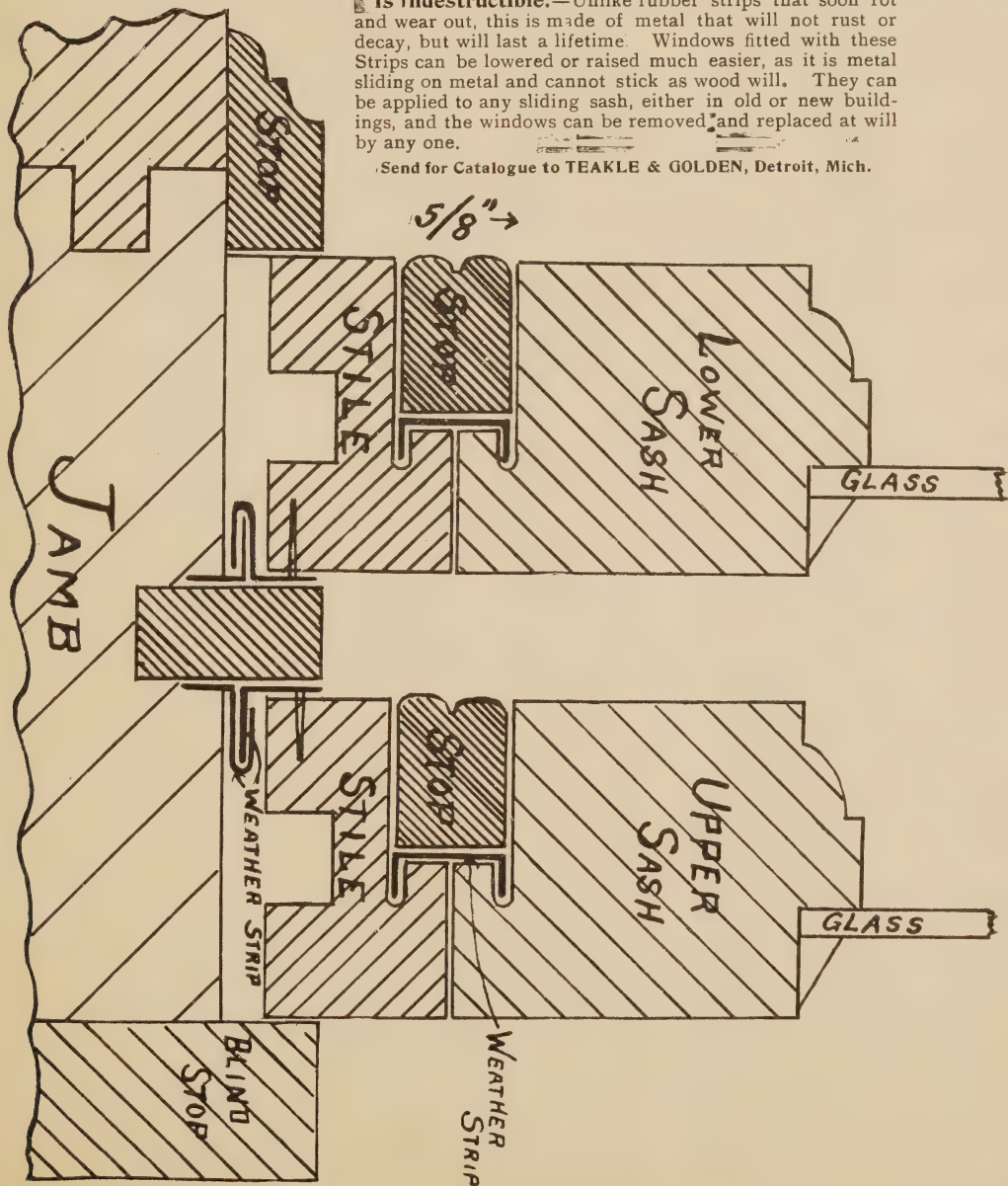
**Keeps the Dust Out.**—It is impossible for dust, dirt, soot, or snow or rain to get in, thereby abating this nuisance completely.

**Prevents Windows from Rattling.**—It prevents windows from rattling; no matter how poorly sash are fitted in the frames, this Weather Strip remedies the defect.

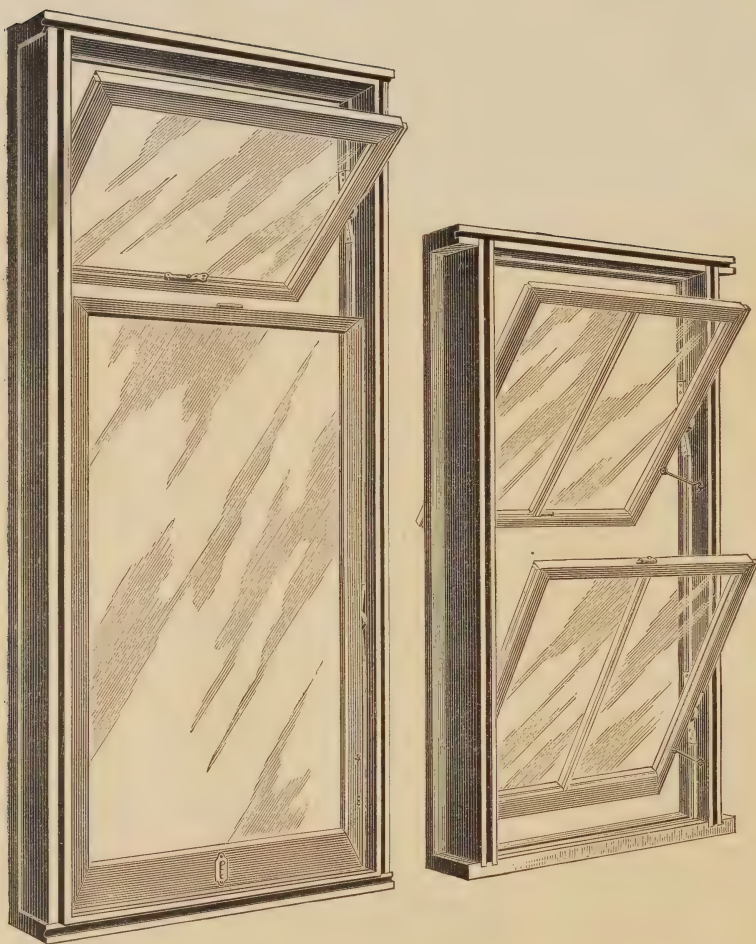
**No Storm-Windows Necessary.**—It saves all annoyance and expense of removing storm-windows; once in place always in place; never needs repairing and are much cheaper.

**Is Indestructible.**—Unlike rubber strips that soon rot and wear out, this is made of metal that will not rust or decay, but will last a lifetime. Windows fitted with these Strips can be lowered or raised much easier, as it is metal sliding on metal and cannot stick as wood will. They can be applied to any sliding sash, either in old or new buildings, and the windows can be removed and replaced at will by any one.

Send for Catalogue to TEAKLE & GOLDEN, Detroit, Mich.







Plank frames and plain sash.

No blind stops, no parting strips, no inside stops, no boxes, no pulleys, no cords.

Better for ventilation, stronger, equally tight against the weather.

Will turn outside inside for cleaning, painting and glazing.

Price of stops and saving in labor on plank frames will pay for sash centers.





















